reserved by that standard for future use. Other methods of communication could be used by the shared spectrum access database and shared spectrum controller when communicating with each other including, for example, Wi-Fi (e.g., via data transmissions conforming to a variant of IEEE 802.11) and LTE communications (e.g., via data transmissions conforming to LTE developed by the 3^{rd} Generation Partnership Project (3GPP)).

[0070] FIG. **7** illustrates an example process flow diagram for radar systems coexisting with a communication system. The example process flow illustrates an example of a radar system coexisting with a communications system that provides a wireless service (e.g., Wi-Fi, LTE) on the S Band. The example process flow further provides an example where the radar system interface **705** reports a change in the radar system's usage, which causes the access node **720** to deny usage to secondary device **725** for a period of time. The shared spectrum access database **710** depicted in FIG. **7** may execute a method similar to the example of FIG. **2** and the shared access controller **715** depicted in FIG. **7** may execute a method similar to the example of FIG. **3**.

[0071] The example process flow of FIG. **7** may begin after the shared access controller **715** and the shared access database **710** have established communication with each other and after the shared access controller **715** has been authenticated with the shared spectrum access database **710**. The example process flow may further begin after the access node **720** has initiated communication with the secondary device **725** on a channel of the S Band (e.g., as represented by communications at **745-1** through **745-4**).

[0072] As depicted in FIG. **7**, the radar system interface **705** may, from time to time, transmit radar usage information to the shared spectrum access database and such transmissions are represented at **730-1** through **730-3**. Radar usage information may or may not include a change from a previous transmission of usage information from the radar system interface **705**. Indeed, in the depicted example, radar usage does not change until some point after the acknowledgement is transmitted from the shared spectrum access database **710** at **735-2**.

[0073] Shared access controller **715** may transmit a channel usage request to the shared spectrum access database **710** at **735-1**. Upon receiving the channel usage request, the shared spectrum access database **710** may determine if there has been a change in usage based on the channel usage request and the radar usage information at **733-1**. If a change has not occurred, the shared spectrum access database **710** may transmit an acknowledgement with a bit indicator set to 0 at **735-2**. The acknowledgement also may indicate that channel usage requests should be transmitted every 100 milliseconds.

[0074] At **730**-M, shared spectrum access database **710** may receive radar usage information from the radar system interface **705**. This radar usage information may include a change to the radar's usage of the S Band (e.g., a change in the operating channel or frequency). In particular, the radar system may now be operating on a channel at which the base station **720** is communicating with secondary device **725**.

[0075] At **735-3**, shared spectrum access database **710** receives another channel usage request from the shared access controller **715**. This channel usage request may have been transmitted 100 milliseconds after the transmission at **735-1**. The shared spectrum access database **710** may proceed to determine whether there has been a change in usage. In this instance, the shared spectrum access database **710** may determine that there has been a change based on the channel usage request received at **735-3** and the radar usage information received at **730**-M. Accordingly, the shared spectrum access database **710** may transmit an acknowledgement with a bit indicator set to 1 at **735-4**.

[0076] Upon receiving the acknowledgement with a bit indicator set to 1, the shared access controller **715** may transmit data to cause the access node **720** to cease operation on at least the channel in the S Band at **740-1**. In some embodiments, the access node **720** may be controlled to cease operation on the channel that it is using to communicate with secondary device **725** (e.g., the channel used for the communications at **745-1** through **745-4**) Accordingly, access node **720** stops communicating on the at least one channel and denies usage of the at least one channel in the S Band to secondary device **725**.

[0077] At **735-5**, the shared spectrum access database **710** may transmit channel usage information to the shared access controller **715**, which may include an updated listing of channels or frequencies being used by the radar system. At **740-2**, the shared access controller may transmit data to control the access node **720** to resume operation in accordance with the channel usage information. In some embodiments, controlling to resume operation may include transmitting a new preferred channel list that lists channels within the S Band that the access node is to use when communicating with the secondary device **725**. Accordingly, communication on the S Band between the access node **720** and the secondary device **725** resumes at **745-5** and continues at **745-6**. The channel on which the communications at **745-5** and **745-6** occur may be different than the channel used during the communications at **745-1** through **745-4**.

[0078] When it is time for the shared access controller **715** to transmit another request (e.g., per the time indicated in the acknowledgement at **735-4**), the shared access controller makes another request at **735-6**. Accordingly, the shared spectrum access database **710** may determine whether there is a change in usage at **733-3** and, because no change has occurred, the shared spectrum access database **710** may transmit an acknowledgement with a bit indicator set to 0 at **735-7**.

[0079] Various types of computers and apparatuses can be used to implement computing devices (such as devices **115**A-**115**B, **130**, **135**A-**135**C, **120**A-**120**H and **125**A-**125**D) according to various embodiments or to implement the methods and processes described herein (such as those described with respect to FIGS. **2**, **3** and **7**). FIG. **8** shows an illustrative computing device **800** in accordance with example embodiments. Various devices described herein may include some or all of the illustrated components of device **800**. Device **800** includes a system bus **801** which may operatively connect various combinations of one or more processors **802**, one or more memories **803** (e.g., random access memory, read-only memory, etc.), mass storage device(s) **804**, input-output (I/O) interfaces **805** and **806**, display interface **807**, and global positioning system (GPS) chip **813**, power interface **814**, and battery **815**.

[0080] I/O interfaces **805** may include one or more transceivers **808**, antennas **809** and **810**, and other components for communication in the radio spectrum. Interface **806** and/or other interfaces (not shown) may similarly include a transceiver, one or more antennas, and other components for communication in the radio spectrum, and/or hardware and other components for communication over wired or other types of communication media. GPS chip **813** may include a receiver,